

Appendix to Fourth Supplemental Amendment

33. (Twice amended) A kit for the synthesis of a polynucleotide, said kit comprising:

- (a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity and is thermostable, and
- (b) a second DNA polymerase, wherein said second polymerase substantially lacks 3'-5' exonuclease activity and is thermostable.

35. (Three times Amended) A method of amplifying a polynucleotide sequence, said method comprising mixing a composition with a synthesis primer and a synthesis template, said composition comprising

- (a) a first DNA polymerase possessing 3'-5' exonuclease activity, wherein said first polymerase is thermostable, and
- (b) a second DNA polymerase, wherein said second polymerase substantially lacks 3'-5' exonuclease activity and is thermostable.

37. (Twice amended) A method according to claim [36] 35, wherein said first DNA polymerase is selected from the group consisting of *Pyrococcus furiosus* DNA polymerase, *Thermotoga maritima* DNA polymerase, *Thermococcus litoralis* DNA polymerase, and *Pyrococcus* GB-D DNA polymerase.

39. (Twice amended) A method according to Claim [36] 35, wherein the second DNA polymerase is selected from the group consisting of *Thermus aquaticus*

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DNA polymerase, (exo-) *Thermococcus litoralis* DNA polymerase, (exo-) *Pyrococcus furiosus* DNA polymerase, and (exo-) *Pyrococcus* GB-D DNA polymerase.

40. (Twice amended) A method according to Claim [36] 35, wherein said second DNA polymerase is *Thermus aquaticus* DNA polymerase.

43. (Twice amended) A kit according to Claim [34] 33, wherein said first DNA polymerase is selected from the group consisting of *Pyrococcus furiosus* DNA polymerase, *Thermotoga maritima* DNA polymerase, *Thermococcus litoralis* DNA polymerase, and *Pyrococcus* GB-D DNA polymerase.

45. (Twice amended) A kit according to Claim [34] 33, wherein the second DNA polymerase is selected from the group consisting of *Thermus aquaticus* DNA polymerase, (exo-) *Thermococcus litoralis* DNA polymerase, (exo-) *Pyrococcus furiosus* DNA polymerase, and (exo-) *Pyrococcus* GB-D DNA polymerase.

52. (Twice amended) A composition comprising:

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity and is thermostable, and

(b) a second DNA polymerase, wherein said second polymerase substantially lacks 3'-5' exonuclease activity and is thermostable.

54. (Amended) A composition according to Claim [53] 52, wherein said second DNA polymerase is *Thermus aquaticus* DNA polymerase.

55. (Amended) A composition according to Claim [53] 52, wherein said first DNA polymerase is selected from the group consisting of *Pyrococcus furiosus* DNA polymerase, *E. coli* DNA polymerase I, Klenow fragment, T-4 polymerase, T-7 polymerase, *Thermotoga maritima* DNA polymerase, *Thermococcus litoralis* DNA polymerase, and *Pyrococcus* GB-D DNA polymerase.

56. (Amended) A composition according to Claim [53] 52, wherein said first DNA polymerase is selected from the group consisting of *Pyrococcus furiosus* DNA polymerase, *Thermotoga maritima* DNA polymerase, *Thermococcus litoralis* DNA polymerase, and *Pyrococcus* GB-D DNA polymerase.

75. (Three times Amended) A method of synthesizing a polynucleotide sequence, said method comprising mixing a composition with a synthesis primer and a synthesis template, said composition comprising

- (a) a first DNA polymerase possessing 3'-5' exonuclease activity, wherein said first polymerase is thermostable, and
- (b) a second DNA polymerase, wherein said second polymerase substantially lacks 3'-5' exonuclease activity and is thermostable.

77. (Amended) A method according to claim [76] 75, wherein said first DNA polymerase is selected from the group consisting of *Pyrococcus furiosus* DNA polymerase, *Thermotoga maritima* DNA polymerase, *Thermococcus litoralis* DNA polymerase, and *Pyrococcus* GB-D DNA polymerase.

79. (Amended) A method according to Claim [76] 75, wherein the second DNA polymerase is selected from the group consisting of *Thermus aquaticus* DNA polymerase, (exo-) *Thermococcus litoralis* DNA polymerase, (exo-) *Pyrococcus furiosus* DNA polymerase, and (exo-) *Pyrococcus* GB-D DNA polymerase.

80. (Amended) A method according to Claim [76] 75, wherein said second DNA polymerase is *Thermus aquaticus* DNA polymerase.

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